# BULLETIN
## of the
# Chicago Herpetological Society

**Volume 52, Number 1**
**January 2017**

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Miscellanea Herpetologica Gabonica VII . . . . Olivier S. G. Pauwels, Toussaint Biyogho Bi Essono II, Piero Carlino, Laurent Chirio Bas Huijbregts, Thomas E. J. Leuteritz, Dominique Rousseaux, Elie Tobi, Christian Vigna and Wim Van Neer 1

Love on the Rocks: A Rattlesnake Love Story . . . . . Roger A. Repp 8

Minutes of the CHS Board Meeting, November 18, 2016 . . . . . 11

Herpetology 2017 . . . . . 12

Chicago Herpetological Society Income Statement: January 1—December 31, 2016, and Balance Sheet, December 31, 2016 . . . . . 14

Advertisements . . . . . 15

News and Announcements: Show Schedule . . . . . 16


**Cover:** A rarely seen arboreal lacertid, *Gastropholis echinata*. Photographed in Wonga-Wongué Presidential Reserve, northwestern Gabon.


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**The *Bulletin of the Chicago Herpetological Society*** (ISSN 0009-3564) is published monthly by the Chicago Herpetological Society, 2430 N. Cannon Drive, Chicago IL 60614. Periodicals postage paid at Chicago IL. **Postmaster:** Send address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago IL 60614.



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*Bulletin of the Chicago Herpetological Society 52(1):1-7, 2017*

# Miscellanea Herpetologica Gabonica VII

**Olivier S. G. Pauwels [1], Toussaint Biyogho Bi Essono II [2], Piero Carlino [3], Laurent Chirio [4], Bas Huijbregts [5], Thomas E. J. Leuteritz [6], Dominique Rousseaux [7], Elie Tobi [8], Christian Vigna [9] and Wim Van Neer [10]**

## Abstract

We present new Gabonese locality records, ecological data or unpublished museum material for *Crocodylus niloticus* (Crocodylidae), *Trionyx triunguis* (Trionychidae), *Agama lebretoni* (Agamidae), *Hemidactylus fasciatus* and *H. mabouia* (Gekkonidae), *Gastropholis echinata* (Lacertidae), *Trachylepis albilabris* (Scincidae), *Afrotyphlops angolensis* (Typhlopidae), *Dipsadoboa viridis*, *Hapsidophrys smaragdinus*, *Toxicodryas pulverulenta* (Colubridae), *Naja melanoleuca* (Elapidae), *Lamprophis olivaceus*, *Psammophis* cf. *phillipsii* (Lamprophiidae), *Natriciteres fuliginoides* (Natricidae), *Causus lichtensteinii* and *C. maculatus* (Viperidae). We document predation cases by *Hapsidophrys smaragdinus* on *Hemidactylus mabouia* and *Trachylepis albilabris*, by *Naja melanoleuca* on *Sclerophrys regularis* (Anura: Bufonidae) and by *Psammophis* cf. *phillipsii* on *Phrynobatrachus auritus* (Anura: Phrynobatrachidae), and consumption of *Arius latiscutatus* (Siluriformes: Ariidae) and *Tragelaphus spekii* (Cetartiodactyla: Bovidae) by *Crocodylus niloticus*. We add one, two and one snake species, respectively, to Estuaire, Moyen-Ogooué and Nyanga provinces' reptile lists. We add four reptile species to the list for Wonga-Wongué Presidential Reserve. We refer all records of *Agama agama* in Gabon to *A. picticauda*.

## Keywords

Biodiversity, herpetofauna, herpetology, Crocodylia, Testudines, Squamata, protected areas, conservation, ecology, Gabon, Equatorial Africa.

## Introduction

The series *Miscellanea Herpetologica Gabonica* was created to provide a forum to present miscellaneous zoogeographical and ecological observations on the reptiles of Gabon, adding to the herpetological synthesis provided by Pauwels and Vande weghe in 2008. More and more persons doing fieldwork in Gabon for conservation NGOs, Gabon environmental authorities, universities and scientific institutions or private companies are submitting their observations (Pauwels et al., 2016a, b), actively contributing to fill herpetological knowledge gaps. Some of the new records presented below result from the Gabon research program of the Natural History Museum of Salento in southern Italy. The French Institut de Recherche pour le Développement (IRD) organized two short faunistic surveys in 2014 whose herpetological part was performed by one of us (LC), allowing to gather several records presented here. Some other records were made during field activities of the World Wildlife Fund (WWF) Gabon, the Brigade de Faune of the Ministère des Eaux et Forêts, and the Smithsonian Institution's Gabon Biodiversity Program.

## Material and Methods

New reptile voucher material under study was deposited in herpetological collections of the Natural History Museum of Salento in Calimera. Collected specimens were injected with 90% ethanol then preserved in 70% ethanol. Snake ventral scales were counted according to Dowling's (1951) method. Snake dorsal scale rows were counted at one head length behind head, at midbody (above the ventral corresponding to half of the total number of ventrals), and at one head length before vent; subcaudal counts exclude the terminal pointed scale. The sex of preserved snakes was determined by dissection of the tail base. Specimens' main diagnostic morphological characters are provided in Table 1 and within the species accounts. Identification of the Nile crocodile stomach contents was carried out through comparison with the osteological reference collection housed at the Royal Belgian Institute of Natural Sciences, Brussels.

Abbreviations: ANPN, Agence Nationale des Parcs Nationaux, Libreville; MSNS, Natural History Museum of Salento, Calimera, Italy. Morphology: A = anal plate; AT = anterior temporals; D =

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**Table 1**. Diagnostic morphometric and meristic data for colubrid, lamprophiid and natricid snake vouchers. For the abbreviations see Materials and Methods.

| Species and collection number | Sex | SVL (mm) | TaL (mm) | DSR | PV + VEN | A | SC | SL | IL | Lor | PreO | PoO | AT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colubridae | | | | | | | | | | | | | |
| *Dipsadoboa viridis* | | | | | | | | | | | | | |
| MSNS Rept 222 | M | 238 | 67 | 16-17-13, U | 2+218, very slightly K | S | 97, S, U | 8(4-5)/8(4-5) | 10(5)/10(5) | 1/1 | 1/1 | 2/2 | 1/1 |
| MSNS Rept 238 | M | 676 | 221 | 17-17-13, U | 1+226, U | S | 107, S, very slightly K | 8(4-5)/8(4-5) | 10(5)/10(5) | 1/1 | 1/1 | 2/2 | 1/1 |
| *Hapsidophrys smaragdinus* | | | | | | | | | | | | | |
| MSNS Rept 228 | M | 610 | 404 | 15-15-11, K | 2+153, K | D | 154, D, K | 9(5-6)/9(5-6) | 10(5)/9(4) | 1/1 | 1/1 | 2/2 | 1/1 |
| *Toxicodryas pulverulenta* | | | | | | | | | | | | | |
| MSNS Rept 243 | M | 722 | 208 | 19-19-15, U | 1+251, K | S | 121, D, K | 8(3-5)/8(3-5) | 11(5)/11(5) | 1/1 | 1/1 | 2/2 | 2/2 |
| Lamprophiidae | | | | | | | | | | | | | |
| *Lamprophis olivaceus* | | | | | | | | | | | | | |
| MSNS Rept 223 | M | 661 | 97 | 25-29-21, U | 3+205, U | S | 43, S, U | 8(3-5)/8(3-5) | 9(3)/9(4) | 1/1 | 1/1 | 2/2 | 1/1 |
| MSNS Rept 224 | F | 301 | 40 | 25-29-23, U | 3+210, U | S | 43, S, U | 8(3-5)/8(3-5) | 9(4)/9(4) | 1/1 | 1/1 | 2/2 | 1/1 |
| Natricidae | | | | | | | | | | | | | |
| *Natriciteres fuliginoides* | | | | | | | | | | | | | |
| MSNS Rept 242 | M | 206 | 128 | 17-17-15, U | 2+122, U | S | 84, D, U | 8(4-5)/8(4-5) | 10(5)/10(5) | 1/1 | 1/1 | 3/3 | 1/1 |

divided; DSR = number of dorsal scale rows; F = female; IL = number of infralabials, followed in brackets by the number of infralabials in contact with the first pair of sublinguals; K = keeled; M = male; PoO = number of postoculars; PreO = number of preoculars; PV = number of preventrals; S = single; SC = number of subcaudals; SL = number of supralabials, followed in brackets by the number of supralabials in contact with orbit; SRR = dorsal scale row reduction; SVL = snout–vent length; TaL = tail length; U = unkeeled; V = ventral scale; VEN = number of ventral scales. Varia: Dept = Department; NP = National Park; Prov. = Province.

## Results

Crocodylia
Crocodylidae
*Crocodylus niloticus* Laurenti, 1768
On 26 April 2010 fishermen tried to free a large live crocodile, which was entangled in their fishing nets in Ndogo Lagoon (secteur Koumaga), Ndougou Dept, Ogooué-Maritime Prov. They called the teams of WWF Gabon (BH) and the Brigade de Faune (TBBE) for help, but the crocodile could not be saved in time and drowned. Its body was brought on land and measured (TEJL, OSGP, ET) (Figure 1). Its SVL was 231 cm; its total length was 440 cm, but the tail tip was missing and healed. Possibly due to old age, it had no teeth left, except one on the left lower jaw, under the middle of the orbit. The crocodile was dissected and its stomach contents were analyzed (TEJL, OSGP, WVN). They included bones of a sitatunga (Mammalia: Cetartiodactyla: Bovidae: *Tragelaphus spekii* Speke, 1863), five *Arius latiscutatus* Günther, 1864 (Siluriformes: Ariidae; longest one 37 cm of total length), varied small parts of vegetal matter (including reeds, probably incidentally ingested), one gastrolith, four gun bullets (lead shot), and part of the fishing net (surface ca. 60×80 cm, 5×5 cm mesh) which caused its drowning (Figures 2 and 3). The presence of five conspecific fishes and part of the

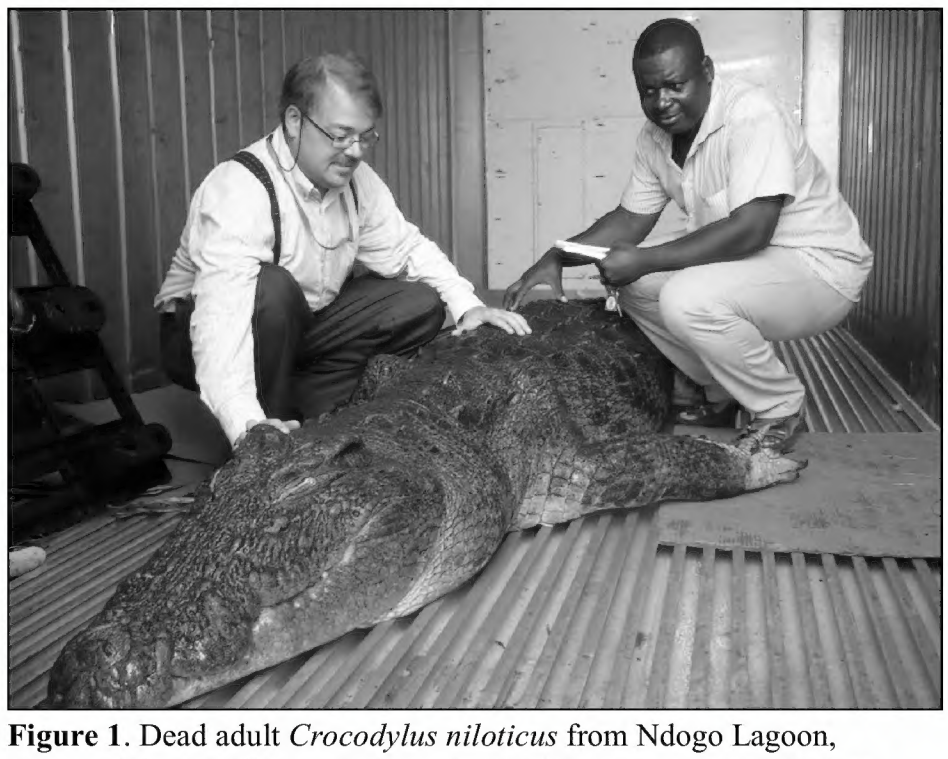

**Figure 1**. Dead adult *Crocodylus niloticus* from Ndogo Lagoon, Ogooué-Maritime Prov., southwestern Gabon, examined by O. S. G. Pauwels (left) and E. Tobi. Photograph by P. Mijsbergh.

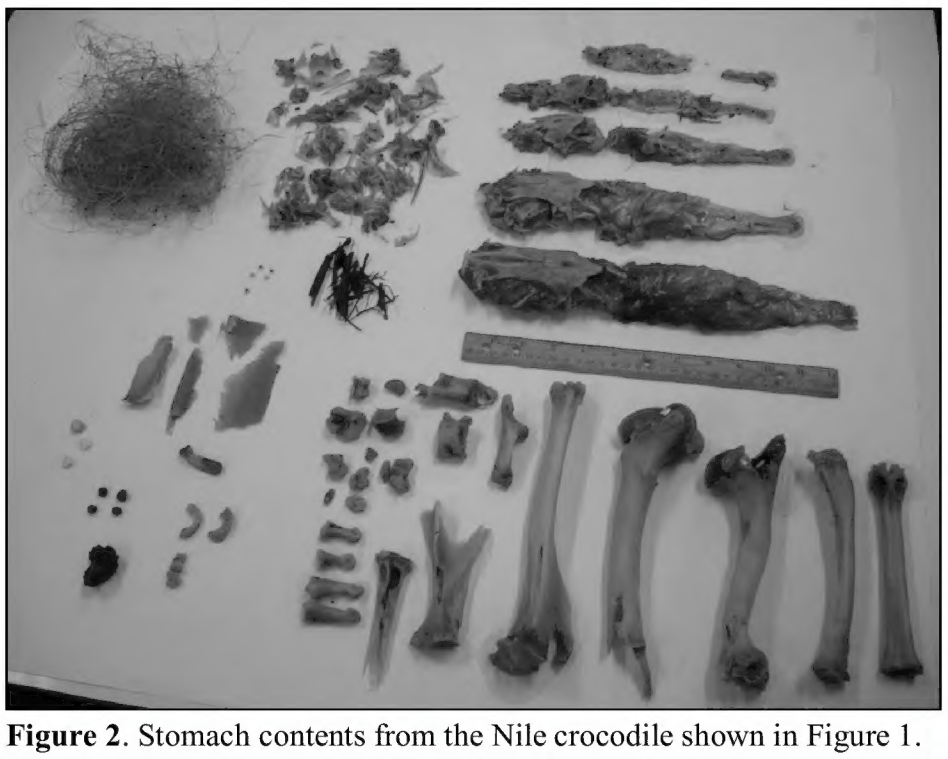

**Figure 2**. Stomach contents from the Nile crocodile shown in Figure 1. The ruler is 30 cm long. Photograph by O. S. G. Pauwels.

**Figure 3**. Gastrolith and lead bullets, part of the stomach contents from the Nile crocodile shown in Figure 1. Photograph by T. E. J. Leuteritz.

**Figure 4**. Live adult *Trionyx triunguis* near Nyonié, Estuaire Prov., northwestern Gabon. Photograph by C. Vigna.

net in its stomach indicates that it was attracted by the fish caught in the net. The spherical lead bullets had a maximum diameter of 7 to 10 mm. They probably served to injure or kill the sitatunga. The sitatunga is the most widespread bovine in Gabon and is well known in this locality (Christy et al., 2007; Vande weghe et al., 2016). The Rough-head sea catfish *Arius latiscutatus* is common in Ndogo Lagoon and frequently found in nets (Mamonekene et al., 2006). The gastrolith was composed of limonite; it had a maximum length of 35.0 mm, a maximum width of 30.0 mm and a mass of 15.0 g. Although the crocodile individual could not be weighted, it is clear that the mass of this single gastrolith was so small relative to the crocodile's total mass that it was unlikely to serve a hydrostatic function, similarly to what was concluded based on the analysis of gastroliths from *Mecistops cataphractus* and *Osteolaemus tetraspis* individuals caught in the same province (Pauwels et al., 2007a, b). This Nile crocodile individual was so exceptionally large for Gabon that it had been reported in popular online media (Anonymous, 2010). Commercial hunting of Nile crocodiles for their skin was very intensive in Gabon until the mid-70s; hunting for their meat still occurs (Pauwels, 2006), and large individuals are rare today.

Testudines
Trionychidae
*Trionyx triunguis* (Forskål, 1775)
On 15 Oct. 2015 at 16h15 one of us (CV) photographed at about 7 km SE of Nyonié, Komo-Océan Dept, Estuaire Prov., an adult individual which was crossing a path (piste Maridor) in dense secondary forest in the direction of a nearby stream (Figure 4). This locality is at about 4 km E of the Atlantic Ocean. New locality record (Maran, 2002; Maran and Pauwels, 2005). The turtle showed no aggressiveness when closely approached. This exceptionally large individual had a straight carapace length of 96 cm. The species is locally rare; a local nature guide working in Nyonié camp for 15 years had never seen it (Michel Djomou Guis, pers. comm. to CV, 2016).

Squamata
Agamidae
*Agama lebretoni* Wagner, Barej & Schmitz, 2009
MSNS Rept 119: Iboundji City, Offoué-Onoy Dept, Ogooué-Lolo Prov., Nov. 2012. Caught by day on a house wall in the city. Adult female. SVL 119 mm; TaL > 121 mm (tip missing, healed); 51 midline vertebral scales from midpoint above pectoral region to midpoint above pelvic region (58 to a point above cloaca); dorsals and supracaudals strongly keeled; no series of enlarged precloacal or femoral scales. New locality record; species already known from several localities in the dept (Pauwels et al., 2016a).

*Agama picticauda* Peters, 1877
Following the work of Leaché et al. (2016), we refer all records of *Agama agama* (Linnaeus, 1758) from Gabon to *A. picticauda*. There is indeed no indication that more than two *Agama* species co-exist in Gabon (Pauwels and Vande weghe, 2008, 2011; A. Leaché, pers. comm.). *Agama picticauda* thus occurs in all provinces of Gabon.

Gekkonidae
*Hemidactylus fasciatus* Gray, 1831
MSNS Rept 118a: Boussimbi, Offoué-Onoy Dept, Ogooué-Lolo Prov., Nov. 2012. Found by night in the village in a wooden toilet hut. Adult female. SVL 81 mm, TaL 47 (last 12 mm regenerated). Pupil vertical. Rostral partly divided (more than halfway) by a vertical suture, surrounded by SL 1, 2 nasals, and one internasal separating the nasals. SL 10 / 12; IL 9 / 9; 18 longitudinal rows of dorsal tubercles at midbody, dorsal tubercles separated from each other by 2–4 granular scales, tubercles of the lowest row smallest; 43 rows of ventral scales between ventrolateral folds. A patch of enlarged precloacal scales in contact with a series of enlarged femoral scales. No precloacal pores; 7 / 7 femoral pits. Postcloacal tubercles 1 / 2. Subcaudals strongly widened in both original and regenerated tail parts. Hands and feet with basal webbing. New locality record; the only other record known from this dept was made on Mount Iboundji by Pauwels et al. (2002a). One of us (LC) observed four night-active individuals in Mabounié, 40 km ESE of Lambaréné, Ogooué & Lacs Dept, Moyen-Ogooué Prov. in January, May and August 2012, in the frame of environmental surveys for a project by Maboumine company to exploit a polymetallic deposit (niobium, tantalum, rare earths and uranium). New locality record (Pauwels and Vande weghe, 2008). LC observed on 20 Feb. 2014 an individual in Mitzic, Okano Dept, Woleu-Ntem Prov. New dept record (Knoepffler, 1974; Pauwels and Vande weghe, 2008). An individual was observed by LC on 17 July 2015 in Grotte Youmbidi (Youmbidi Cave; 0°49'58.5"S, 12°45'09.0"E), about 2 km ESE of Lastoursville airport, Mouloundou Dept, Ogooué-Lolo Prov. New locality record (Pauwels and Vande weghe, 2008). Another individual was observed by LC on 11 June 2014 at night while it was crossing

**Figure 5**. Live adult *Gastropholis echinata* photographed by an ecoguard in Wonga-Wongué Presidential Reserve, northwestern Gabon.

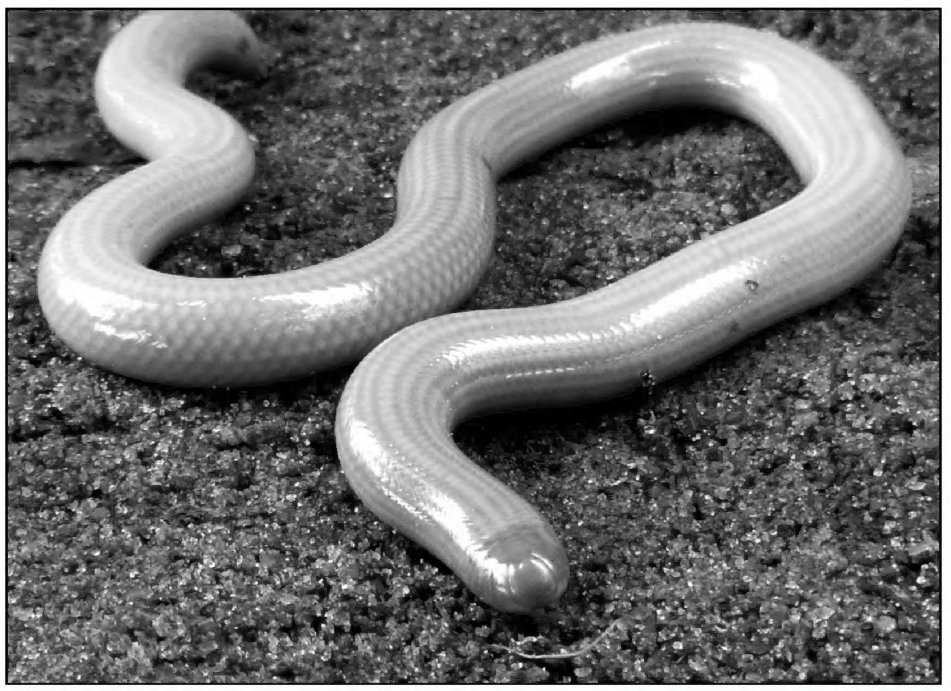

**Figure 6**. Live adult *Afrotyphlops angolensis* photographed in Wonga-Wongué Presidential Reserve, northwestern Gabon. Photograph by L. Chirio.

the road in Kango, Komo Dept, Estuaire Prov. New locality record (Pauwels et al., 2002b). LC also examined an individual in Ayémé-Maritime, Komo-Mondah Dept, Estuaire Prov., on 27 Dec. 2015. New locality record (Pauwels and Vande weghe, 2008).

*Hemidactylus mabouia* (Moreau de Jonnès, 1818)
See under *Hapsidophrys smaragdinus*.

Lacertidae
*Gastropholis echinata* (Cope, 1862)
An adult individual (Figure 5) was photographed by an eco-guard at the Camp Présidentiel (Presidential Camp; 0.47736 S, 9.59067 E) in Wonga-Wongué Presidential Reserve, Ogooué & Lacs Dept, Moyen-Ogooué Prov. on 11 March 2016. New record for Wonga-Wongué Presidential Reserve (Vande weghe et al., 2016). This lizard is very rarely encountered, probably due to its exclusively arboreal habits; it is known from a second locality in Ogooué & Lacs Dept, but in total, including the new locality record presented here, from only four localities in Gabon, in Estuaire, Moyen-Ogooué and Ogooué-Ivindo provinces (Pauwels and Vande weghe, 2008).

Scincidae
*Trachylepis albilabris* (Hallowell, 1857)
MSNS Rept 113: Iboundji City, Offoué-Onoy Dept, Ogooué-Lolo Prov., Nov. 2012. Caught by day on the stairs at the entrance of a house. SVL 68 mm; TaL 108 mm (last 71 mm regenerated). Dorsal scales with three keels. Lower eyelid with a transparent disk; 4 / 4 supraoculars; one scale between posterior supraocular and anterior supratemporal; 47 scales between throat and cloacal scales; 27 scale rows around midbody. Supranasals in contact by a point; prefrontals widely in contact. New locality record; the only other known locality for this species in the dept is Diangui (Pauwels et al., 2002a). See also under *Hapsidophrys smaragdinus*.

Typhlopidae
*Afrotyphlops angolensis* (Barboza du Bocage, 1866)
An adult individual was photographed by one of us (LC; Figure 6) at the Camp Présidentiel (0.47736 S, 9.59067 E) in Wonga-Wongué Presidential Reserve, Ogooué & Lacs Dept, Moyen-Ogooué Prov. on 14 Apr. 2014. New record for Wonga-Wongué Presidential Reserve (Vande weghe et al., 2016) and new prov. record, filling a gap between the records in Ogooué-Maritime and Ogooué-Ivindo prov. (Pauwels and Vande weghe, 2008).

Colubridae
*Dipsadoboa viridis* (Peters, 1869)
We report here the second and third known specimens from the core area of Ivindo NP, MSNS Rept 222 and MSNS Rept 238, collected by one of us (PC) at Ipassa on 14 and 19 June 2016, respectively (first specimen recorded by Carlino and Pauwels, 2015). Both were found at around 23:30 in mature secondary forest about 2 km SE of the research station, on tree branches at 50-100 cm above the floor. Both show a vertically elliptical pupil; temporal formula of 1 + 2 / 1 + 2; an anterior pair of sublinguals much longer than the posterior one; a slightly widened vertebral row. In MSNS Rept 238, SRR from 17 to 15 occurs by fusion of 8$^{th}$ row with vertebral row above V 158 (right) and 156 (left) and from 15 to 13 by fusion of rows 3 and 4 above V 158 (left) and 160 (right). On 22 April 2014 LC photographed an adult individual in Mitzic, Okano Dept, Woleu-Ntem Prov. (Figure 7); its uniform green dorsal color, blue ventral and tail color, DSR of 17, frontal longer than wide and single subcaudals allow to readily identify it. New dept

**Figure 7**. Live adult *Dipsadoboa viridis* in Mitzic, Woleu-Ntem Prov., northeastern Gabon. Photograph by L. Chirio.

**Figure 8**. Adult *Hapsidophrys smaragdinus* in Nyonié, Estuaire Prov., killed with a machete, with one of the three adult *Hemidactylus mabouia* its stomach contained. On the right side lies the head of the snake. Photograph by C. Vigna.

record (Pauwels and Vande weghe, 2008).

*Hapsidophrys smaragdinus* (Schlegel, 1837)
MSNS Rept 228: Ipassa, Ivindo NP, Ogooué-Ivindo Prov., May 2016. Pupil round. Temporal formula 1 + 2 / 1 + 2. Dorsal scales with two apical pits. SRR from 15 to 13 occurs above V 93 on both sides by fusion of rows 3 and 4, and from 13 to 11 above V 105 (left) and 103 (right) by fusion of rows 4 and 5. Its stomach contains a *Trachylepis albilabris*, freshly ingested, head first (SVL 32 mm, TaL 40 mm; lower eyelid with a transparent disk; supranasals separated; prefrontals separated; one scale between posterior supraocular and anterior supratemporal; 30 scale rows around midbody; dorsals with three keels). This new specimen confirms this species as one of the most common in the park (Carlino and Pauwels, 2015), as it is generally in Gabon (Pauwels and Vande weghe, 2008). On 3 Dec. 2016 at 9:15 AM, one of us (CV) photographed an adult individual (total length 91 cm) which had just been killed with a machete in Nyonié, Komo-Océan Dept, Estuaire Prov., by villagers who mistook it for a *Dendroaspis*. Its stomach contained three freshly ingested adult *Hemidactylus mabouia* (Figure 8). The latter observation confirms this gecko as a common prey item for this snake (Pauwels and Vande weghe, 2008). LC observed by day on 15 June 2014 an individual in Kango, Komo Dept, Estuaire Prov., killed in a plantation; another individual on 20 Dec. 2015 that escaped in the vegetation in Ayémé Plaine, Komo-Mondah Dept, Estuaire Prov. (both new locality records; Pauwels and Vande weghe, 2008).

*Toxicodryas pulverulenta* (Fischer, 1856)
MSNS Rept 243: Ipassa, Ivindo NP, Ogooué-Ivindo Prov., 24 June 2016. Caught by one of us (PC) at 20:45 on a branch at one meter above the ground in secondary forest along a road. Temporal formula 2 + 2 on each side. Vertebral row widened. SRR from 19 to 17 occurs above V 149 (left) and 146 (right) by fusion of rows 3 and 4 on each side; from 17 to 15 above V 150 (left) and 147 (right) by fusion of row 8 with vertebral row on each side. This is the second specimen recorded from Ivindo NP. Like the first one (Carlino and Pauwels, 2015) it has 19 DSR at midbody; Pauwels and Vande weghe (2008) had only recorded Gabonese specimens with 21 DSR at midbody. Based on the extensive molecular phylogeny by Figueroa et al. (2016) we accept the allocation of the African species previously referred to *Boiga* by us and other authors to *Toxicodryas*.

**Figure 9**. Adult *Naja melanoleuca* regurgitating a *Sclerophrys regularis* in Gamba, Ogooué-Maritime Prov., southwestern Gabon. Photograph by D. Rousseaux.

Elapidae
*Naja melanoleuca* Hallowell, 1857
On 30 March 2008 one of us (DR) saw a cobra being killed with sticks by villagers in Gamba, Ndougou Dept, Ogooué-Maritime Prov. While being beaten, the cobra regurgitated an adult *Sclerophrys regularis* (Reuss, 1833) (Anura: Bufonidae) (Figure 9). The latter toad species is well known from Gamba (Burger et al., 2006; Pauwels, 2007), but it had not yet been recorded in the diet of this cobra species in Gabon. On 15 July 2016 one of us (LC) observed an adult dead-on-road individual on the northern exit road of Tchibanga, Mougoutsi Dept, Nyanga Prov. New prov. record (Pauwels and Vande weghe, 2008). On 9 Feb. 2010 LC observed an individual crossing the road at Mabounié, 40 km ESE of Lambaréné, Ogooué & Lacs Dept, Moyen-Ogooué Prov. New locality record (Pauwels and Vande weghe, 2008). Another individual, killed by workers in a Siat Gabon plantation, was examined on 24 July 2013 by LC near Bitam, Ntem Dept, Woleu-Ntem Prov. New dept record (Pauwels and Vande weghe, 2008). LC witnessed a bite case of a dog by a Black and white cobra in Quartier Hauts de Gué Gué in Libreville on 15 Feb. 2014. The dog died 72h after the bite.

Lamprophiidae
*Lamprophis olivaceus* (Duméril, 1856)
We report here the second and third known specimens from the core area of Ivindo NP, MSNS Rept 223-224, collected at Ipassa in May 2016. They show respectively the following temporal formula: 1 + 3 / 1 + 3 and 1 + 3 / 1 + 2 + 4. Their main meristic characters are presented in Table 1. The species was already recorded from three localities in the park's buffer zone (Carlino and Pauwels, 2015) and can thus be regarded as locally common. On 21 Dec. 2015 LC examined a dead-on-road individual in Ayémé-Maritime, Komo-Mondah Dept, Estuaire Prov. Its uniform grey dorsal coloration and orange eyes with a vertical pupil left no doubt as to its identification. New prov. record (Pauwels and Vande weghe, 2008).

*Psammophis* cf. *phillipsii* (Hallowell, 1844)
In the afternoon of 30 Sept. 2005 one of us (DR) photographed a juvenile individual in Gamba Oil Terminal, Ndougou Dept, Ogooué-Maritime Prov., while it was eating an adult *Phrynobatrachus auritus* Boulenger, 1900 (Anura: Phrynobatrachidae) (Figure 10). New prey record, confirming again the very eclectic diet of this snake, already known to feed in Gabon on amphibians, lizards and birds (Pauwels and Vande weghe, 2008; Pauwels et al., 2016b).

**Figure 10**. Juvenile *Psammophis* cf. *phillipsii* eating an adult *Phrynobatrachus auritus* in Gamba Oil Terminal, Ogooué-Maritime Prov., southwestern Gabon. Photograph by D. Rousseaux.

Natricidae
*Natriciteres fuliginoides* (Günther, 1858)
MSNS Rept 242: Ipassa, Ivindo NP, Ogooué-Ivindo Prov., May 2016. Temporal formula 1 + (1 / (1+1)) on both sides. SRR from 17 to 15 occurs above V 83 (left) and 80 (right) by fusion of rows 3 and 4. This new material confirms the species as one of the most common snakes in the park (Carlino and Pauwels, 2015).

Viperidae
*Causus lichtensteinii* (Jan, 1859)
On 5 July 2014 one of us (LC) found a dead adult individual in Salo savanna (0.62479 S, 9.53449 E, alt. 131 m asl) near Malon pool in Wonga-Wongué Presidential Reserve, Bendjé Dept, Ogooué-Maritime Prov. (Figure 11). First record for Wonga-Wongué Presidential Reserve (Vande weghe et al., 2016) and new dept record; the closest record in the province was made in the Fernan Vaz in Etimboué Dept (Boulenger, 1906).

*Causus maculatus* (Hallowell, 1842)
One of us (LC) examined the photograph of an individual of this species taken by an ecoguard at the Camp Présidentiel (0.47736 S, 9.59067 E) in Wonga-Wongué Presidential Reserve, Ogooué & Lacs Dept, Moyen-Ogooué Prov. in June 2014. The same month LC observed another individual at the Camp Présidentiel. Their typical stout habitus, round pupil, blotched dorsal pattern

**Figure 11**. Adult *Causus lichtensteinii* found dead in Wonga-Wongué Presidential Reserve, northwestern Gabon. Photograph by L. Chirio.

and dark parietal chevron left no doubt as to their specific identity. First record for Wonga-Wongué Presidential Reserve (Vande weghe et al., 2016) and new prov. record (Pauwels and Vande weghe, 2008). The presence of this viper in the savanna areas of southwestern Gabon is expected, especially since it has been recorded from Conkouati in the coastal area of the Republic of the Congo (Pauwels and Vande weghe, 2008: 237).

**Acknowledgments**

The new material from Ivindo NP was obtained through a CENAREST-MSNS convention with support from Institut de Recherches Agronomiques et Forestières (IRAF) and IRET. Daniel Franck Idiata and Aurélie Flore Koumba Pambo (CENAREST), Kathryn Jeffery (ANPN), Auguste Ndoutoume-Ndong (IRAF) and Alfred Ngomanda (IRET) facilitated the research permits. LC thanks Richard Oslisly (IRD, Libreville) and ANPN for their support to the Wonga-Wongué field work. We are grateful to Michel Djomou Guis (Camp Beti Castorène, Nyonié) and Adam Leaché (University of Washington, Seattle) for useful information. OSGP thanks Antonio Durante for providing working facilities at the MSNS, Peter Mijsbergh (Shell) and Quentin Rodde (Gamba) for their help in the study of the Nile crocodile, and Mike Dloogatch for editorial support. This is publication #153 of the Gabon Biodiversity Program, Smithsonian Conservation Biology Institute. The examination of the Nile crocodile by TEJL was done while he was working for the Smithsonian Institution.

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*Bulletin of the Chicago Herpetological Society 52(1):8-11, 2017*

# Love on the Rocks: A Rattlesnake Love Story

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*Dedicated to the master of the golden age of rattlesnake hunting. He makes us smile every month. Thanks for everything, Don.*

We saw him for the first time on 16 December 1998. I say "we" saw him because the Rattlesnake Queen of Northern Arizona, Erika Nowak, was with me this day. He was a nothing special kind of snake, a lone, brownish Western Diamond-backed Rattlesnake (*Crotalus atrox*) that was coiled tightly under a south-facing bolder overhang. He was a smallish fellow, perhaps a little over 70 cm long. I immediately called this snake a male, which raised the question from Erika, "How do you know this is a male?" Of course, she was right to question my prompt attempt to hang a gender on this snake. It was coiled in such fashion as the tail was hidden from view. Because of Erika's question, I did something that, at the time, I otherwise *never* would have considered doing. I gave our snake a gentle poke with my tongs, in order to get a look at his tail. He shifted uneasily away from his coil spot, but promptly coiled again less than a foot away. Our brief look at his tail clearly showed him to be a male. (Refer to Figures 1 and 2 for a visual example of the size difference between the tails of a male and female *atrox*). My reason for guessing him to be a male was simply because females do not often bask outside their overwintering sites in December. Nevertheless, I am very glad that Erika asked the question, because in addition to the verification of the gender, we also got a rattle count as well. This was to prove priceless in the months ahead. Said rattle count was basal plus nine segments, the tenth segment being broken. The rattle string was tapered, indicating that he was a younger male entering his prime of life. Normally, when a male is out front of a structure in December, one can bet the farm that a female is nearby. We of course inspected every nook and cranny of the structure behind our boy, but the female that I *knew* was in there was not visible. We moved on to other things on this day, but 17 visits followed throughout the winter/spring of 1998 and 1999.

I was greatly relieved when, four days later, our male was still coiled under the overhang. He had moved back to the exact spot that he had occupied when Erika and I had disturbed him. One fine day, this author will regale the readers of this column with what happens when hard science is applied to aggregate dens of *atrox*. For now, the reader can rest assured that the remainder of the observations at this den were kept at a distance.

A description of the den is in order. Naming it first seems like a good idea. I'm going to call it "Wheeler Den." An image and a quick description of Wheeler Den can be found in Figure 3. We also have yet to name the lone male *atrox* mentioned in this article. In order to honor he who makes us smile every month, we shall name him "Spot." Pythons have spots, and so do rattlesnakes. An image of Spot in the early going of this observation can be found in Figure 4. (But Spot is in every image to follow as well).

Spot remained vigilantly in place for the next four visits, which occurred on 20 and 28 December 1998, as well as 1 and 7 January 1999. There was evidence that Spot had been doing some shifting and house cleaning while under the overhang. Most of the cholla pods that had infested the center of the overhang had been swept neatly to one side, creating a clean pocket within the shelter. But he was never viewed more than 30 cm away from his original coil spot. The New Year's Day visit yielded a visual on another *atrox* coiled in the east-facing crevice formed between two leaning boulders. This would be the female that I *knew* was there before ever seeing her. It seems fitting to name her "Ms. Spot." It all started to come together with my next visit to Wheeler Den, which was on 16 January 1999. Spot had moved from his post under the overhang, and into the same east-facing crevice as Ms. Spot occupied. He was viewed with his basal plus nine/10th broken rattle and rear flank flush with the crevice edge (despite the horrible images, see

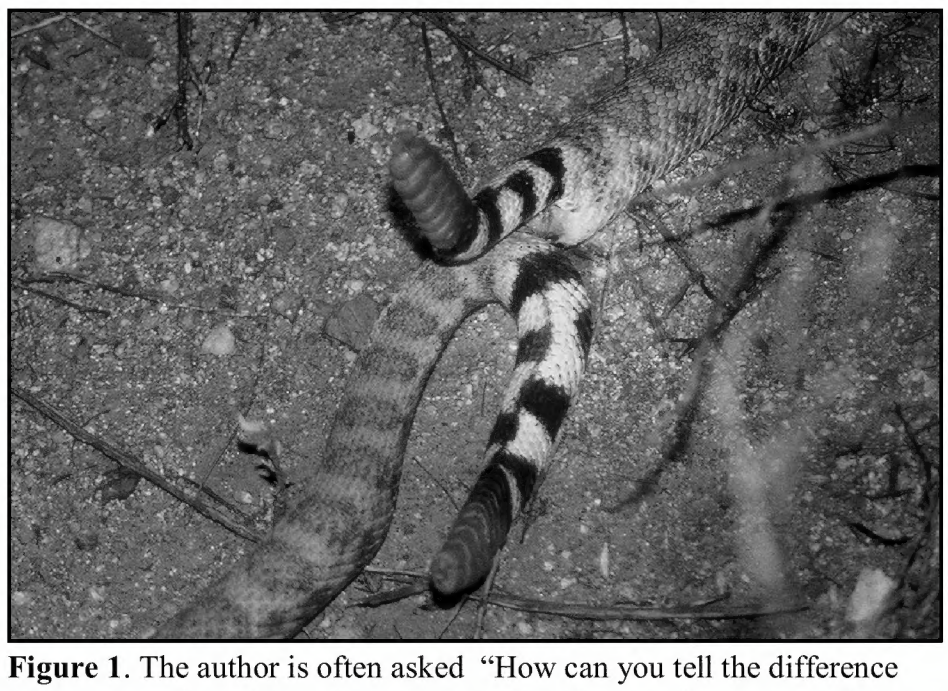

**Figure 1**. The author is often asked "How can you tell the difference between a male and female rattlesnake?" At least with *atrox*, one look at the tail is all that it takes. In this image of mating, the female is the upper right snake. The tail is narrow at the cloaca, and much shorter than that of the male. Image by the author.

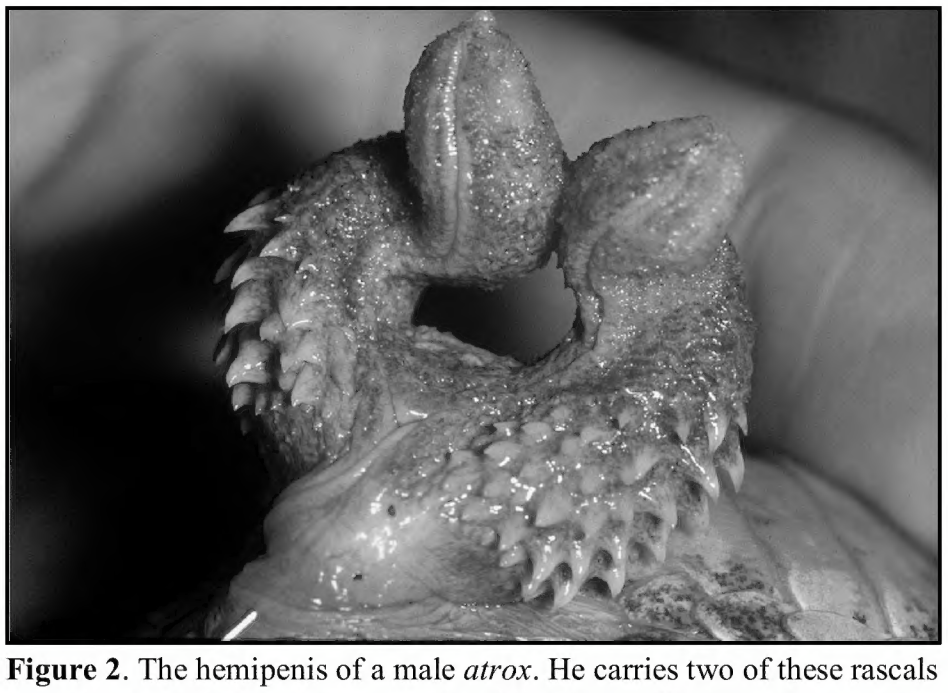

**Figure 2**. The hemipenis of a male *atrox*. He carries two of these rascals tucked into his tail, one to each side of the cloaca. That is why a male's tail is thicker at the base, grows longer, and is generally bigger everywhere. Image by David L. Hardy, Sr.

**Figure 3**. Wheeler Den is actually composed of a stack of three large gneiss boulder slabs leaning against each other. If one were to draw an imaginary circle around the boulders, it would be roughly 4 meters in diameter. The dark area on the lower left side of the den is the overhang where Spot was first observed. Figure five shows the east entrance to Wheeler Den, which is to the right and upslope of the overhang. The two teddy bear cholla plants surrounding Wheeler Den generously offer their droppings as a deterrent to anyone or anything that gets too close.

Figure 5). Some careful crack shining with my mirror revealed that Ms. Spot was still in there, but behind him. On 7 February, they were side by side, Spot being up front, roughly 40 cm deep. On 12 February, Spot had completely engulfed her with his coils to the point where she was hidden in the center. And on 15 February, they were side by side again, with Spot being closer to the crevice edge.

On 25 February, the couple was viewed coiled side by side under the overhang. They had moved roughly 2 meters to get there. There were many ways they could have crawled there—around the boulders, or through any number of entrance/exit holes under Wheeler Den. This was my first good look at Ms. Spot. She was slightly smaller than Spot, with a rattle count of basal plus six segments, the seventh segment was broken. I would guess her to the same age as Spot, a sweet young lady entering her prime. She was a dainty thing; her colors were a nice blend of silver and gray. Her angular, distinctly female-shaped head revealed a kind of beauty that few humans would admire. Her boyfriend was a handsome, dark brown rascal who

**Figure 5**. 16 January 1999, the east crevice. The image is blurred, but it shows a male rattlesnake with a basal plus nine/10th broken rattle inside the crevice. As Spot was no longer under the overhang, we can safely assume that this is him. Ms. Spot was noted in that crevice on 1 January 1999. Let the pair bonding begin!

**Figure 4**. 20 December 2016. Spot under the overhang. He was viewed here from 16 December through 7 January 1999. Images 3–10 are all by the author.

was the bastion of appreciation for his companion. They were the perfect couple (Figure 6).

I visited them a total of seven times between 25 February and 22 March. With each visit, they were viewed together under that overhang. From what I saw, they never left that overhang, and it seems unlikely that they did. On colder days, they would be coiled tightly together, tucked in the most sheltered corner of the overhang, behind a conveniently placed cholla pod mound. It is my speculation that Spot created that mound as a part of preparing the honeymoon suite. On the warm days, they would occupy the center of the overhang. Spot would perform the classic, twitchy chin rubs on Ms. Spot's midsection, neck and head. She would remain coiled on her tail, but was more than tolerant of the attention she was receiving. He used every trick in the book to get her to yield that hidden tail, but for whatever reason, she was being coy. No male *atrox* would ever respect a female that was too easy. On 19 and 22 March, the courtship was reaching a near fever pitch. He was whirling all over her, and she was no longer hiding her tail. Their tails were aligned at several points during these visits, but full-blown mating did not occur. The weather was growing warm, and I had a full work week ahead. I

**Figure 6**. 25 February 1999, under the overhang. At some point between 15 and 25 February, the pair shifted from the east crevice to the overhang. This was my first good look at Ms. Spot. "She was a dainty thing; her colors were a nice blend of silver and gray. Her angular, distinctly female-shaped head revealed a kind of beauty that few humans would admire. Her boyfriend was a handsome, dark brown rascal who was the bastion of appreciation for his companion. They were the perfect couple."

**Figure 7**. 2 March 1999. The early phase of courtship often involves a behavior known as tail searching. The female often hides her head as well as her tail under her coils, while the male tries to force his tail inside the coil in a groping attempt to find her tail. "No male *atrox* would ever respect a female that was too easy."

feared that work would interfere with the more important things in life, and I would miss the actual mating. See Figures 7–10 for images of the lengthy courtship that ensued through 22 March.

On a Thursday afternoon, 25 March 1999, I stepped outside our shop for a minute, and noted that the day had become overcast, and the humidity was up. The air temperature was also up. The only thing that was down was my work ethic. Upon re-entering the building, I hooked the nearest coworker, and said "My snakes are mating today, and I'm leaving. Cover for me." And that was it—off I went to check on Wheeler Den! (Having understanding coworkers is paramount to any successful herping avocation.) About an hour later, I arrived to see the young couple engaged in full coitus. A few photos were snapped, and then they were left to finish their mating episode in peace. I returned on 28 March, and was not at all surprised to see that they had cleared out.

In hindsight, focusing on the action at Wheeler Den was one of the best snake-watching experiences that I have ever had. Unlike previous years, when I focused on the bigger dens, there was none of the confusion of trying to separate the fly scat from the pepper as to who was who in snarls of snakes. With only two snakes to watch, there was nothing to distract or confuse the observer. There was only a long and lingering pair bonding and

**Figure 9**. 19 March 1999. The long courtship continues, with positive results. The female is no longer hiding her tail.

**Figure 8**. 7 March 1999. Chin rubbing and tongue flicking are all part of the male's arsenal of foreplay.

subsequent mating between two snakes to witness.

I am a firm believer of the saying "It ain't science until it can be proved." But this won't get in the way of my own interpretation of what was witnessed here. I don't believe that even the brightest of all herpetologists, with unlimited funding at his or her disposal (fat chance), could ever "prove" how the mind of a snake works. The fact remains that more and more observations are pouring in that serve to demonstrate complex social behaviors occurring at the aggregate dens of rattlesnakes. The next paragraph is highly speculative, and can't be proven. But as one who has spent countless hours in front of rattlesnake dens, I can assure the reader that what comes next is certainly possible.

I wasn't alone in knowing that Ms. Spot was somewhere in those boulders. Spot *also* knew that she was there. As evidenced by his prolonged presence under the overhang, Spot was preparing the honeymoon suite for his lady. The sweeping aside of the cholla pods might serve to indicate this. When the time was right, he got close to her, and stayed close to her for over a month. How Spot lured his lady to the honeymoon suite isn't 100% clear to me, but we can rest assured that pheromones and body cues were involved. I might even suggest that she followed him willingly. She may have even led him there herself. In any case, if she didn't want to be with him, she would have bolted at the first opportunity. He then patiently stayed with her, and showered her with attention for yet another month. For over

**Figure 10**. 25 March 1999. Coitus! Note that Ms. Spot has lifted her tail to finally yield to her boyfriend. Once a pair mates, they almost always clear out shortly after. On 28 March, the couple was gone.

three months total, the stage for a successful romantic encounter was conceived and executed with a style that even we humans can learn from.

By the time this issue of the *Bulletin* is in your hands, we will be approaching that special day that we humans celebrate as the day of showing appreciation for our mates. And so, herpers, let's make that special day shine. Let's prepare that honeymoon suite, and find a place to intertwine. Let's lay out some pheromones, choreograph some body cues, make with the chin rubs, and be grateful that we have more than tails to use in the process. This is the day for that special someone who was made just for us. Let's treat them like the king or queen that they are.
Happy Valentine's Day, herpers!

This here is Roger Repp, signing off from Southern Arizona, where the turtles are strong, the snakes are handsome, and the lizards are all above average.

## Minutes of the CHS Board Meeting, November 18, 2016

President John Bellah called the meeting to order at 7:50 P.M. Board members Aaron LaForge, Brandon Ottolino and Amy Sullivan were absent.

The minutes of the October 14 board meeting were read and accepted.

CHS Website: John Bellah has contact information of a website designer. Board members were asked to review the current website and decide what they like and don't like and report back at the next meeting.

**Officers' Reports**

Treasurer: The profit & loss statement for the Midwest Herpetological Symposium was presented and discussed.

Membership secretary: Mike Dloogatch read the list of expiring memberships. John Archer moved that the CHS give and/or extend memberships to the Symposium speakers. The motion passed unanimously.

**Committees**

Jr. Herpers: There were 29 children and 20 adults in attendance at the November meeting. In January there will be an opportunity for the kids to set up on the first floor of the museum to present to the public. In the spring there is a frog monitoring project suitable for children age 8 and up.

**Old Business**

Elections: Absentee ballots will be in the November *Bulletin* and also will be downloadable from the CHS website. The election will be held during the December 28 general meeting.

ReptileFest: John Archer stated that we are in need of someone to chair and coordinate future 'Fests. Andy Sagan is looking for volunteers to help organize ReptileFest 2017.

**New Business**:

Grants: Robert Jadin has once again agreed to chair the grants committee. Jessica Wadleigh and Morgan Lantz will be added to the committee.

Gail Oomens met a vendor at NARBC who makes leather bracelets. The vendor would like to donate part of her proceeds to the CHS. She wold like to list this on her website. John Bellah will contact her for more information.

The meeting adjourned at 9:00 P.M.

*Respectfully submitted by recording secretary Teresa Savino*

# Herpetology 2017

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

## USE OF ARTIFICIAL REFUGES

R. J. Hodges and C. Seabrook [2016, The Herpetological Bulletin 137:6-12] during eight years of a continuing long-term study of *Vipera berus* in a chalk downland nature reserve, recorded encounters with all life stages at artificial refuges and in the open. The refuges were paired sheets of galvanized corrugated-iron ("tins") and roofing felt, deployed at the rate of 2.7 to 4.2 pairs/ha. Distinctive seasonal patterns of encounters are reported for each life stage and provide insights into viper behavior. For adults, encounters in the open and at refuges both contribute significantly to records while for immature stages records depended largely on their use of refuges as they were rarely encountered in the open. All life stages were encountered at tins more frequently than felts. Gross encounter rates have been refined by reference to observations on 483 individuals recognized by their head-scale patterns. The numbers of different individual adult males and adult females observed in the open were broadly similar, as were the numbers under tins, but the frequency with which these individuals were resighted was greater in the open for males and greater under tins for females. At least for gravid females, refuge use may be a substitute for mosaic basking. Under the conditions of this study, roughly 70% of individual adult vipers used refuges at least once, usually much more frequently, while for immatures the proportion remains uncertain. These observations could be used to improve the planning and interpretation of long-term monitoring studies.

## CANE TOAD REPRODUCTIVE CYCLES

K. Yasumiba et al. [2016, Herpetologica 72(4):288-292] note that cane toads (*Rhinella marina*) have successfully invaded many locations. Their highly plastic reproductive activity might be one of the factors facilitating invasions. Previous studies of the reproductive cycle of this species collected toads only from breeding areas. To examine how toad reproductive condition changed through time, and its relationship to observed levels of breeding activity, the authors sampled toads from nonbreeding habitat over 2 yr, while observing breeding behavior at the nearest pond. Female and male toads were collected and dissected each month, and body mass, gonadal volume, and fat body mass were recorded. Mean gonadal volume of both female and male toads decreased over the breeding season and increased when toads were not breeding. Female reproductive condition was classified into early, middle, or late stages of egg development. The proportion of females with late-stage eggs slowly increased until the point in the breeding season when males started calling, and then decreased. The fat body mass cycle was roughly opposite to the gonadal cycle. The seasonal cycle in toad reproductive condition was correlated with rainfall, indicating that rainfall is one of the causes of variation in the timing of their reproduction. The authors suggest the highest capture rates of large females with fully mature eggs in traps would be obtained in the late dry to early wet seasons, up to the time when males start calling.

## TAXONOMIC STATUS OF *BUFO INTERMEDIUS*

J. R. Mendelson III et al. [2016, Copeia 104(3):697-701] report that *Bufo intermedius* Günther, 1858, has a complex taxonomic history, with the type series being reported from Guayaquil and the Andes of Ecuador. However, these specimens are not referable to any known South American bufonid species. The authors examined the type series and found, based on morphology, that the specimens likely represent a Mesoamerican species, as earlier authors had suggested. They further explored this possibility by analyzing the stomach contents of one of the syntypes. The unique combination of arthropods, particularly the presence of the beetle species *Megalostomis dimidiata* and *Zygogramma signatipennis*, confirmed that the Ecuadorian locality data are erroneous and that the type series was collected in Mexico. The authors maintain that the types of *Bufo intermedius* are conspecific with the Mexican species *Incilius occidentalis* (Camerano, 1879) and propose a new synonymy between *Bufo intermedius* Günther, 1858 and *Incilius occidentalis* (Camerano, 1879). An application has been made to the International Commission on Zoological Nomenclature to preserve prevailing usage of the junior name *Incilius occidentalis* for this widespread Mexican species.

## SONORAN DESERT TORTOISE SPATIAL ECOLOGY

B. K. Sullivan et al. [2016, Journal of Herpetology 50(4):509-519] note that the behavioral ecology of Sonoran Desert Tortoises (*Gopherus morafkai*) remains relatively unstudied. In general, Sonoran Desert Tortoises (SDTs) differentially use incised washes and rocky slopes and avoid open flats and intermountain valleys, except during apparent emigration events. Relatively little is known about the temporal pattern of space use in SDTs and even less about such use in relation to sex. The authors observed activity of adult and juvenile SDTs via radiotelemetry, and hatchling activity incidentally, over a 3-yr period in central Arizona. The SDTs were most active in the fall (August–October) but exhibited a second peak of activity in the spring (April). On average, males moved longer distances than did females in every month of the year when SDTs were active. Distance moved by females in the fall was significantly greater than all other months except April; a similar pattern of greater male movement in the fall was apparent but not statistically significant. Activity of adults was detected in virtually every month of the year except January; at least one hatchling was observed active in every month of the year. The authors conclude that adult SDTs home range areas 1) are consistent in size and placement across multiple years and, for females especially, may include a "migratory" pattern to north slopes following summer rains, where they encounter a higher diversity and abundance of food plants; 2) are highly overlapping in females but less so in males; and 3) contain a few refuges in relatively lower elevation washes that are used consistently, especially during the hot, dry summer (May and June), and that are selected over many other available caliche refuges.

## URBAN ROCK AGAMAS

S. Balakrishna et al. [2016, Journal of Herpetology 50(3): 423-428] note that rapid urbanization is a growing threat to biodiversity, causing wide-scale extirpation of species from their natural habitats. Some species such as rock agamas, *Psammophilus dorsalis*, seem to be sufficiently tolerant and continue to persist in urban environments. Given that urbanization alters species composition at multiple trophic levels, it is reasonable to expect a shift in the diet composition and hunting modes of populations across rural and urban areas. Based on identified contents from stomach flushes, the authors found that *P. dorsalis* are generally myrmecophagous—their diet is mainly ants. Diet of males and females in each area overlapped highly (80–91%), even though males were significantly larger than females. Dietary overlap between urban and rural populations also was high (80.3%). Surprisingly, rural lizards had lower body mass indices than did urban lizards, despite the greater diversity of prey types and the larger volume of food consumed. This species uses a sit-and-wait hunting strategy, but the authors found that the rate of movement of males was higher in rural areas compared to urban areas, which likely results in higher energy expenditure. Individuals of *P. dorsalis* do not seem to be negatively affected by urbanization but instead manage to hunt in and around the small patches of vegetation that remain, enabling them to maintain a higher body condition than that of lizards in undisturbed rural habitats.

## TADPOLE FEEDING BEHAVIOR

D. Escoriza et al. [2016, Herpetologica 72(4):281-287] note the ecological role of anuran larvae is usually defined as a primary consumer. Recent studies have shown, however, that some grazing–rasping species consume animal matter on a regular basis. The authors investigated zoophagy in two species of spadefoot toads (*Pelobates cultripes* and *Pelobates varaldii*). The larvae of both species showed no specific morphological adaptations for macrophagy but are very large and inhabit invertebrate-rich ponds under prolonged summer drought conditions. The authors hypothesized that both species would consume animals having high nutritional value, and that there would be no difference between the two species in terms of the animals consumed, because tadpoles are broad dietary generalists. They also hypothesized that the consumption of animals would vary during development based on the size limitations of the oral cavity. Examination of the intestinal contents of *P. varaldii* and *P. cultripes* indicated that they had consumed a wide range of invertebrates, as predicted. Differences in the composition of animals between the two species might be attributable to variability in the composition of invertebrate assemblages among ponds. This study provides the first evidence of consumption by taxa within *Pelobates* of aquatic species of Insecta (Coleoptera, Diptera, Ephemeroptera, and Odonata), Collembola (Sminthuridae and Poduridae), large Branchiopoda (Anostraca, Notostraca, and Spinicaudata), and Gastropoda (Physidae and Planorbidae). There was also a correlation between the diversity of animals consumed and the ontogenetic variation in size in both *Pelobates* species. These findings support the hypothesis that grazing–rasping tadpoles have an omnivorous role in aquatic trophic webs.

## PACIFIC POND TURTLES IN THE DESERT

D. J. Germano [2016 Copeia 104(3):663-676] notes that the western pond turtle (*Actinemys marmorata*), the only native freshwater turtle in California, occurs in a variety of habitats from sea level to about 2040 m elevation, from mesic forests to deserts. The San Joaquin Desert in California once supported large populations of this species in lakes, sloughs, and marshes fed by water from the mountains of the Sierra Nevada. Because of damming in the mountains and agriculture on the desert floor, much of the aquatic habitat is gone. Although some biologists proffered that only non-viable populations of western pond turtles occurred in the San Joaquin Valley south of the delta, the author found a surprisingly robust population of this species at Goose Lake, an ephemeral freshwater lake on the desert floor in northwestern Kern County. From 1995 to 2006, 737 individuals were marked. Growth rates and reproduction were fairly high compared to other populations of western pond turtles in ponded waters. The average yearly population estimate was 597.4 turtles with annual survivorship estimates of 0.81 for adult males, 0.73 for adult females, 0.84 for juveniles 80–119 mm carapace length (CL), and 0.73 for juveniles <80 mm CL. The estimate of $\lambda$ denoted a stable population. Although the population occurs in a habitat controlled by an agricultural water district, permanent water is always available and the site is secure from poaching. Despite severe decreases in numbers of turtles in the San Joaquin Desert over the past 100 y, based on this study and other recent studies, there are several populations of western pond turtles in the area that appear to be large and stable.

## OLIVE RIDLEY SEA TURTLE NESTING

S. Honarvar et al. [2016, Herpetologica 72(4):303-308] note that Playa La Flor in Nicaragua is one of the few remaining beaches where olive ridley sea turtles (*Lepidochelys olivacea*) nest in arribadas. This study presents data on the status of the nesting population of *L. olivacea* on Playa La Flor from 1998 to 2006. In 2004 six plots (6 m × 6 m) were established on a 400-m section of the nesting beach to measure the levels of illegal egg take, clutch hatching success, and hatchling production. The total number of turtles nesting at Playa La Flor increased from 1998 to 2006 where arribadas ranged in size from 167 to 60,816 turtle encounters. In August 2004, 45% of the clutches laid during the arribada were taken illegally from the study plots, whereas these levels were lower during the arribadas occurring from September to November. In 2004, clutch hatching success and hatchling production were higher in plots located high on the beach compared with plots that were closer to or below the high-tide line. Clutch hatching success and hatchling production were higher in the September arribada than during other arribadas within the same year. The lower hatching success and hatchling production of nests laid during later arribadas might be explained by increased nest density, and overlapping clutches in the study plots could lead to an increase in microbial load, $O_2$ demand, and $CO_2$ production. If manipulating clutches is warranted on Playa La Flor, managers should target clutches that are at the highest risk of drowning, are in areas of high nest density, and are deposited during the larger arribadas that occur later in the nesting season. The location of clutches to be moved/removed might change between years, even on the same beach.

## Chicago Herpetological Society
## Income Statement: January 1 -- December 31, 2016

| Income | | Expense | |
|---|---|---|---|
| Donations (unrestricted) | $ 5,668.28 | Donations (conservation) | $ 2,000.00 |
| Donations (adoptions) | 273.00 | Adoptions | 7,711.00 |
| Donations (grants program) | 5.00 | Grants | 7,500.00 |
| Membership dues | 11,510.20 | Bulletin printing / mailing | 10,646.33 |
| ReptileFest | 69,012.69 | ReptileFest | 31,387.58 |
| Midwest Herp Symposium | 13,451.00 | Midwest Herp Symposium | 17,189.10 |
| Junior herpers | 689.69 | Junior herpers | 283.47 |
| Merchandise sales | 160.00 | Rent (storage) | 1,728.54 |
| AmazonSmile | 11.82 | Bank / PayPal / Square fees | 998.33 |
| Interest | 52.72 | Other CHS shows | 2,895.00 |
| Raffle | 278.00 | Liability Insurance | 2,560.00 |
| Bulletin back issues | 50.00 | Equipment and supplies | 1,106,80 |
| | | Licenses and Permits | 119.00 |
| | | Postage | 1,536.02 |
| | | Speaker reimbursement | 3,655.09 |
| | | General meeting expenses | 164.78 |
| | | Membership related expenses | 606.86 |
| | | Miscellaneous | 437.72 |
| Total Income | $101,162.40 | Total Expense | $92,525.62 |

**Net Income $8,636.78**

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## Chicago Herpetological Society
## Balance Sheet: December 31, 2016

| | |
|---|---|
| **Assets** | |
| Checking | $ 1,155.46 |
| Money market | 58,623.61 |
| Petty cash--show fund | 238.00 |
| PayPal | 2,763.29 |
| Postage on deposit | 270.19 |
| **Total Assets** | **$63,050.55** |
| | |
| **Liabilities** | |
| Credit card | 188.87 |
| **Total liabilities** | **188.87** |
| **Equity** | |
| Restricted -- Grants | 5.00 |
| Retained earnings | 54,219.90 |
| Net income | 8,636.78 |
| **Total equity** | **$62,861.68** |
| **Total liabilities & equity** | **$63,050.55** |

# Advertisements

For sale: **highest quality frozen rodents**. I have been raising rodents for over 30 years and can supply you with the highest quality mice available in the U.S. These are always exceptionally clean and healthy with no urine odor or mixed in bedding. I feed these to my own reptile collection exclusively and so make sure they are the best available. All rodents are produced from my personal breeding colony and are fed exceptional high protein, low fat rodent diets; no dog food is ever used. Additionally, all mice are flash frozen and are separate in the bag, not frozen together. I also have ultra low shipping prices to most areas of the U.S. and can beat others shipping prices considerably. I specialize in the smaller mice sizes and currently have the following four sizes available: Small pink mice (1 day old—1 gm) , $25 /100; Large pink mice (4 to 5 days old—2 to 3 gm), $27.50 /100; Small fuzzy mice (7 to 8 days old—5 to 6 gm) , $30/100; Large fuzzy mice / hoppers (10 to 12 days old—8 to 10 gm), $35/100 Contact Kelly Haller at 785-234-3358 or by e-mail at kelhal56@hotmail.com

Herp tours: **Costa Rica herping adventures**. Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site http:// hiss-n-things.com and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney, 305-664-2881.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to mdloogatch@chicagoherp.org.

## SHOW SCHEDULE

In addition to ReptileFest the Chicago Herpetological Society puts on many live animal displays throughout the year. The events now scheduled for February through April are listed below. CHS members who wish to participate in an event should call or text ahead to Show Coordinator Dick Buchholz, 805-296-9516, to confirm.

- Notebaert Nature Museum, first full weekend of each month, Saturday and Sunday, 10 A.M. – 3 P.M.
- All Animal Expo, first Saturday & third Sunday of each month, 10 A.M. – 3 P.M., Dupage County Fairgrounds, Wheaton.
- Tinley Park Fishing Show, February 11–12, 9 A.M. – 5 P.M., Tinley Park High School, 6111 175th St, Tinley Park.
- Kids Expo 2017, February 25–26, Saturday 9 A.M. – 5 P.M., Sunday 10 A.M. – 5 P.M., Moraine Valley Fitness Rec Center, 9000 W College Parkway, Building H, Palos Hills.
- Arlington Pet Show, March 17–19, Friday Noon – 9 P.M., Saturday 9 A.M. – 9 P.M., Sunday 10 A.M. – 5 P.M., Arlington Park Racetrack, Arlington Heights.
- NARBC, March 18–19, Saturday 10 A.M. – 5 P.M., Sunday 11 A.M. – 4 P.M., Tinley Park Convention Center, 18451 Convention Center Drive, Tinley Park.
- Kids Expo 2017, March 31 – April 2, Friday 3 P.M. – 9 P.M., Saturday 9 A.M. – 5 P.M., Sunday 10 A.M. – 5 P.M., Renaissance Schaumburg Convention Center, Schaumburg.
- Chicago Pet Show, April 29–30, 10 A.M. – 5 P.M., Oak Lawn Community Pavilion, Oak Lawn.

**We've been doing it right for over 20 years**

**We're not stopping now**

**ReptileFest 2017**

**April 8, 9 2017**

**Northeastern Illinois University**

**Athletic Complex**

**3600 W. Foster Avenue**

**You're not going to miss it!**

## UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, January 25, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Alicia Beattie and Jared Bilak** will be our speakers. As graduate students at Southern Illinois University, and in cooperation with the Shedd Aquarium, Alicia and Jared have been studying the ecology of Chicago area mudpuppies in Lake Michigan and Wolf Lake. Alicia and Jared will discuss the findings and conservation implications of their research, as well as future directions and the next phase of their research on mudpuppies at Wolf Lake, a shared lake in the highly developed region of Chicago, Illinois, and Hammond, Indiana. They will also discuss the big picture implications of their project, and explain how research like theirs helps conservation of mudpuppies and other species in the Chicago area. The work of Ms. Beattie and her co-authors, Dr. Philip Willink and Dr. Matt Whiles, will be published in the February issue of the *Journal of Great Lakes Research*.

The speaker at the February 22 meeting has not yet been confirmed.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

### Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., Friday, February 11, 2017, at the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

### The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group's Facebook page.

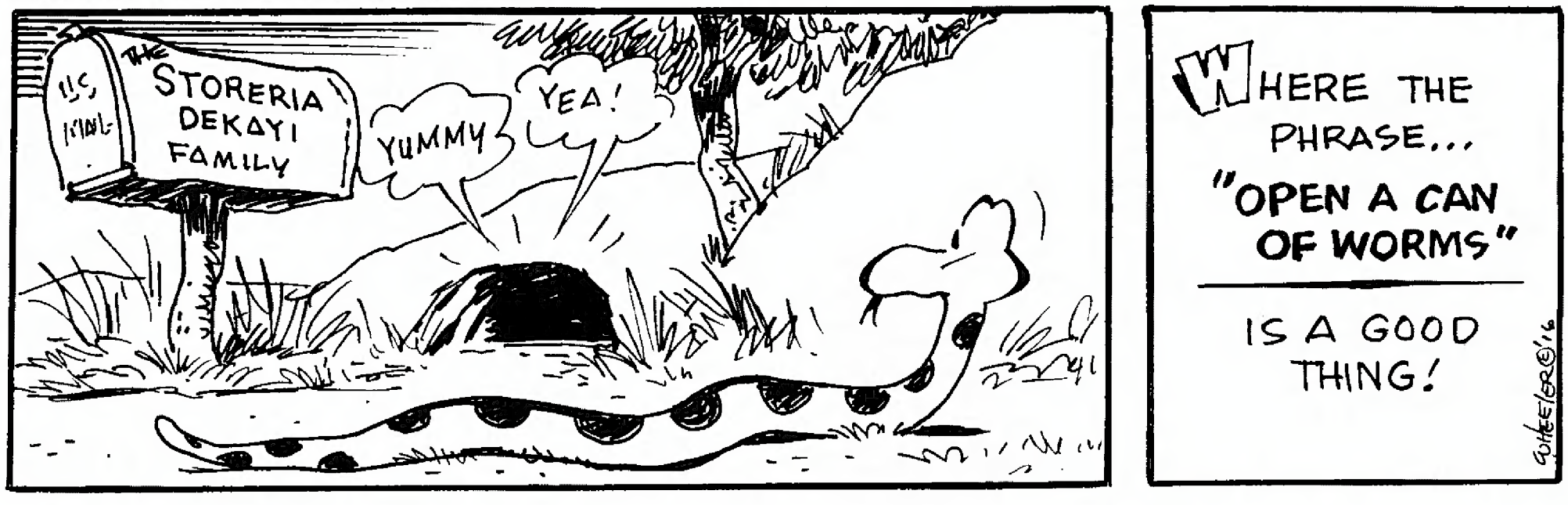
## ELECTION RESULTS

As a result of the elections held December 25, 2016, the following officers and members-at-large will serve on the CHS Board of Directors for the year 2017.

| | | | |
|---|---|---|---|
| President: | Rich Crowley | Membership Secretary: | Mike Dloogatch |
| Vice-president: | Jessica Wadleigh | Sergeant-at-arms: | Mike Scott |
| Treasurer: | Andy Malawy | Members-at-large: | Dan Bavirsha |
| Recording Secretary: | Gail Oomens | | Lisette Chapa |
| Media Secretary: | Morgan Lantz | | Linda Malawy |

As immediate past-president, John Bellah will also serve on the board.

## THE ADVENTURES OF SPOT



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